

## CLAIMS

1. A virtualizing microarray comprising:
  - a catalog microarray containing a number of features, each feature containing a type of
  - 5 probe molecule designed to bind a target molecule;
  - data describing each feature of the catalog microarray; and
  - logic that generates a virtual microarray from the virtualizing microarray, the virtual microarray comprising data describing a subset of the features of the catalog microarray.
- 10 2. The virtualizing microarray of claim 1 wherein the data describing a feature of the catalog microarray includes:
  - data that identifies a position of the feature within the catalog microarray;
  - data that identifies the type of probe molecules contained in the feature; and
  - data that describes the target molecule of the probe molecules contained in the feature.
- 15 3. The virtualizing microarray of claim 2 wherein the data that describes the target molecule of the probe molecules contained in the feature includes:
  - data that describes an immediate target molecule to which the probe molecules bind.
- 20 4. The virtualizing microarray of claim 2 wherein the data that describes the target molecule of the probe molecules contained in the feature includes:
  - data that describes a biological molecule produced by synthesis directed by an immediate target molecule to which the probe molecules bind.
- 25 5. The virtualizing microarray of claim 2 wherein the data that describes the target molecule of the probe molecules contained in the feature further includes:
  - data describing molecular function;
  - data describing a biological process; and
  - data describing a cellular component.

6. The virtualizing microarray of claim 1 wherein the logic that generates a virtual microarray from the virtualizing microarray includes:

logic that allows specification of masks related to the data describing each feature of the catalog microarray; and

5 logic that uses the specified masks to filter the features of the catalog microarray to produce the data describing a subset of the features of the catalog microarray.

7. The virtualizing microarray of claim 1 included in one of:

a microarray scanner;

10 a microarray-data processing system;

a microarray-data visualization system.

8. The virtualizing microarray of claim 1 further including physically associating the data describing each feature of the catalog microarray with the catalog microarray.

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9. The virtualizing microarray of claim 1 wherein the catalog microarray further includes a header that allows the logic to associate data describing each feature of the catalog microarray with a catalog microarray identified by information contained in the header.